

REMARKS

Claims 26 and 30-50 are pending in this application. Claim 29 has been canceled and its subject matter has been incorporated in amended independent claim 26. Claims 26, 30, 34, 47 and 49 have been amended. No new matter has been introduced.

Claims 26, 30-32 and 34-46 are rejected under 35 U.S.C. § 102 as being anticipated by Brumm (U.S. Patent No. 3,624,753). Reconsideration is respectfully requested.

The claimed invention relates to a device for handling pressurized gas and a method of operating a surge-prevention valve. As such, amended independent claim 26 recites a “device for handling pressurized gas” comprising *inter alia* “first and second valves” located within a housing and “an actuator arranged to initially open said first valve for flowing gas in a first direction . . . and to subsequently open said second valve for flowing gas in an axial direction.” Amended independent claim 26 also recites “a lower cup-shaped valve element located within said housing . . . having a recessed area for receiving a lower seat of said second valve, said lower seat being in communication with a lower portion of said pressurization orifice.”

Amended independent claim 34 recites a surge prevention dual-path valve for pressurized oxygen comprising *inter alia* “a housing having an inlet connected to a surge of high pressure oxygen” and “a first valve located within said housing, said first valve comprising an upper seat in communication with an upper portion of a pressurization orifice” and “a second valve . . . comprising a lower seat in communication with a lower portion of said pressurization orifice.” Amended independent claim 34 also recites “a threaded piston unit arranged to initially move said upper seat in a first direction to open said pressurization orifice, and to subsequently move said lower seat in an axial direction to open said flow path.”

Independent claim 39 recites a method of operating a surge prevention dual-path valve by “moving at least a portion of a piston unit in an axial direction for about 0.25

to about 1.5 seconds to cause gas to flow through a pressurization orifice” and “subsequently moving said piston unit in said axial direction to cause gas to flow through a second valve.”

Brumm relates to a “two-stage opening globe valve.” According to Brumm, “[C]oaxial and lateral primer ducts connect the chamber to the upstream and downstream flow passages.” (Abstract). Thus, after the primer valve 76 closes and shuts off an outlet primer duct 91 “opening into the downstream flow passage (16),” the primer valve 76 “will engage and open the main valve plug 76 for full capacity upstream flow.” (Col. 2, lines 53-57; Col. 3, lines 2-3).

Brumm does not disclose all limitations of independent claims 26, 34 and 39. Brumm does not teach or suggest a “device for handling pressurized gas” comprising *inter alia* “first and second valves” located within a housing and “a lower cup-shaped valve element located within said housing . . . having a recessed area for receiving a lower seat of said second valve, said lower seat being in communication with a lower portion of said pressurization orifice,” as amended independent claim 26 recites. In Brumm, main valve plug 74, which would arguably correspond to the “lower cup-shaped valve element” of the claimed invention, is not provided with a “recessed area for receiving a lower seat of said second valve,” as recited in amended independent claim 26.

Brumm also fails to teach or suggest a surge prevention dual-path valve for pressurized oxygen comprising *inter alia* “a threaded piston unit,” as amended independent claim 34 recites. In Brumm, valve stem 46, which would arguably correspond to the piston unit of the claimed invention, is provided with stem screw 34 and is not “threaded,” as recited in amended independent claim 34. In addition, Brumm fails to teach or suggest a method of operating a surge prevention dual-path valve by “moving at least a portion of a piston unit in an axial direction for about 0.25 to about 1.5 seconds to cause gas to flow through a pressurization orifice,” as independent claim 39 recites. For at least these reasons, Brumm fails to anticipate the subject matter of claims 26, 30-32 and 34-46 and withdrawal of the rejection of these claims is respectfully requested.

Claim 33 is rejected under 35 U.S.C. § 103 as being unpatentable over Brumm in view of Bathe (U.S. Patent No. 6,125,846) (“Bathe”). Reconsideration is respectfully requested.

Bathe relates to a nitric oxide delivery system that provides “protection against the inadvertent inclusion of NO<sub>2</sub> in the therapeutic gas administered to the patient.” According to Bathe, one of the functions of the delivery system is “to provide a purge upon start up . . . that clears the regulator and conduits of any NO<sub>2</sub> that may have formed during the prior idle period of the system.” Bathe also teaches that a detector “determines the start-up and may automatically carry out the purge cycle or may cause a prompt that is visual or audible to remind the user to carry out the purge cycle manually.” When the delivery of NO to the patient is discontinued, Bathe teaches that “the system can, again, sense the termination or cessation of the therapy and automatically shut off the supply of NO containing gas at the source or provide an audible or visual prompt to remind the user to shut off the supply of the NO containing gas manually.”

The subject matter of claim 33 would not have been obvious over Brumm in view of Bathe. As noted above, Brumm fails to teach or suggest all limitations of amended independent claim 26. Similarly, Bathe is silent about the limitations of amended independent claim 26. As acknowledged by the last Office Action, the only limitation of the claimed invention taught by Bathe is the use of “a specific type of gas, such as nitrous oxide.” (Office Action at 3). Accordingly, for at least these reasons, the Office Action fails to establish a *prima facie* case of obviousness, and withdrawal of the rejection of claim 33 is respectfully requested.

Claims 47-50 stand rejected under 35 U.S.C. § 103 as being unpatentable over Bathe in view of Brumm. Reconsideration is respectfully requested.

Amended independent claim 47 recites a “method of operating a surge prevention dual-path valve” by *inter alia* “moving at least a portion of a threaded piston unit in an axial direction to cause oxygen to flow through a pressurization orifice of a first

valve” and “subsequently moving said piston unit in said axial direction to cause a torque engagement that allows oxygen to flow through a second valve.” Amended independent claim 49 recites a “method of operating a surge prevention dual-path valve” by *inter alia* “moving at least a portion of a threaded piston unit in an axial direction to cause nitrous oxide to flow through a pressurization orifice of a first valve” and “subsequently moving said piston unit in said axial direction to cause a torque engagement that allows nitrous oxide to flow through a second valve.”

The subject matter of claims 47-50 would not have been obvious over Bathe in view of Brumm. Bathe fails to teach or suggest a method of operating a surge prevention dual-path valve, much less a method of operating a surge prevention dual-path valve by “moving at least a portion of a threaded piston unit in an axial direction to cause oxygen to flow through a pressurization orifice of a first valve” and “subsequently moving said piston unit . . . to cause a torque engagement that allows oxygen to flow through a second valve,” as independent claim 47 recites. Bathe is also silent about a “method of operating a surge prevention dual-path valve” by “moving at least a portion of a threaded piston unit in an axial direction to cause nitrous oxide to flow through a pressurization orifice of a first valve” and “subsequently moving said piston unit . . . to cause a torque engagement that allows nitrous oxide to flow through a second valve,” as amended independent claim 49 recites.

Similarly, Brumm fails to teach or suggest all limitations of amended independent claims 47 and 49. Brumm does not teach or suggest “moving at least a portion of a *threaded* piston unit” or “moving said piston unit . . . to cause a *torque engagement* that allows nitrous oxide to flow through a second valve at a second flow rate,” as amended independent claims 47 and 49 recite (emphasis added). Accordingly, for at least these reasons, the Office Action fails to establish a *prima facie* case of obviousness, and withdrawal of the rejection of claims 47-50 is respectfully requested.

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In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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